

CLAIMS

1. Method of recovering information in an interactive digital television system (106), in which information from a transmission centre (101) is transported in a data stream (10) to at least one terminal device (111) in which one or more applications (322) are running, said method comprising a step for loading and storing said information in a memory (103) provided in said terminal device (111), characterized in that it furthermore comprises the following steps carried out in said terminal device (111):

- a) reception (E40) of a request sent by at least one said application (322) to recover said information;
- b) according to at least one predefined selection criterion, search (E41) for said information in at least one of the information carriers formed by said data stream (10), and said memory (103); and
- c) if the search result is positive, recovery (E44) of said information from said information carrier (10, 103) containing said information and provision of said duly recovered information to said at least one application (322) sending said request.

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2. Method as claimed in Claim 1, characterized in that said search step b) comprises the following sub-step:

- b1) search (Type 1) for said information in said memory (103).

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3. Method as claimed in Claim 1, characterized in that said search step b) comprises the following sub-step:

- b2) search (Type 2) for said information in said data stream (10).

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4. Method as claimed in Claim 1, characterized in that said search step b) comprises the following sub-step:

- b3) search (Type 4) for said information in said memory (103) after an unsuccessful search in said data stream (10).

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5. Method as claimed in Claim 1, characterized in that said search step b) comprises the following sub-step:

- b4) search (Type 3) for said information in said data stream (10) after an unsuccessful search in said memory (103).

6. Method as claimed in any one of Claims 1 to 5, characterized in that said information is encapsulated in at least one MPEG table identified by a respective table identifier (TID).

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7. Method as claimed in Claim 6, characterized in that said search step b) comprises the substep (E502, E505, E508, E512) for searching for said MPEG table from its respective table identifier (TID) whereas the recovery step c) comprises the sub-step (E507, E510, E514) for recovering the information from the duly identified MPEG table.

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8. Method as claimed in any one of Claims 1 to 7, characterized in that it furthermore comprises the step for defining at least one said selection criterion by said application (322).

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9. Method as claimed in any one of Claims 1 to 8, characterized in that it furthermore comprises the step for defining at least one said selection criterion by an intermediate software layer (300b, 600) and/or a hardware layer (300c, 600) of said terminal device (111).

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10. Method as claimed in any one of Claims 1 to 9, characterized in that it furthermore comprises the step for defining at least one said selection criterion by said interactive digital television system (106).

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11. Method as claimed in any one of Claims 1 to 10 and Claim 6, characterized in that it furthermore comprises the step for storing said information and/or MPEG tables in said memory (103) according to a structural organization similar to that of said information and/or MPEG tables in said data stream (10).

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12. Method as claimed in any one of Claims 1 to 11, characterized in that it furthermore comprises the step for formatting (EA4, EB4) said recovered information before supplying the latter to said at least one application (322) sending said request.

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13. Information recovery device in an interactive digital television system (106) in which information originating from a transmission centre (101)

is transported in a data stream (10) to at least one terminal device (111) in which one or more applications (322) are running, said terminal device (111) being equipped with an information memory (103) and means (103a) for loading said information into said information memory (103), characterized in
5 that it furthermore comprises:

means (211, 322b, 316, 320, 318) for receiving a request sent by at least one said application (322) to recover said information;

10 means (211, 322b, 316, 320, 318) for searching, according to at least one predefined selection criterion, for said information in at least one of the information carriers formed by said data stream (10) and said information memory (103); and

15 means (211, 322b, 316, 320, 318) for recovering, in the case of a positive search result, said information from said information carrier (10, 103) containing said information and supplying said duly recovered information to said at least one application (322) sending said request.

20 14. Device as claimed in Claim 13, characterized in that said search means comprise first additional means for searching for said information in said memory (103).

15. Device as claimed in Claim 13, characterized in that said search means comprise second additional means for searching for said information in said data stream (10).

25 16. Device as claimed in Claim 13, characterized in that said search means comprise third additional means for searching for said information in said memory (103) after an unsuccessful search in said data stream (10).

30 17. Device as claimed in Claim 13, characterized in that said search means comprise fourth additional means for searching for said information in said data stream (10) after an unsuccessful search in said memory (103).

35 18. Device as claimed in any one of Claims 13 to 17, characterized in that said information is encapsulated in at least one MPEG table identified by a respective table identifier (TID).

19. Device as claimed in Claim 18, characterized in that said search means comprise fifth additional means for searching for said MPEG table from its respective table identifier (TID) whereas said recovery means
5 comprise additional means for recovering the information from the duly identified MPEG table.

20. Device as claimed in any one of Claims 13 to 19, characterized in that it furthermore comprises first means for defining at least
10 one said selection criterion by said application (322).

21. Device as claimed in any one of Claims 13 to 20, characterized in that it furthermore comprises second means for defining at least one said selection criterion by an intermediate software layer (300b, 600)
15 and/or a hardware layer (300c, 600) of said terminal device (111).

22. Device as claimed in any one of Claims 13 to 21, characterized in that it furthermore comprises third means for defining at least one said selection criterion by said interactive digital television system (106).
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23. Device as claimed in any one of Claims 13 to 22 and Claim 18, characterized in that said memory (103) comprises additional means for storing said information and/or MPEG tables according to a structural organization similar to that of said information and/or MPEG tables in said data
25 stream (10).

24. Device as claimed in any one of Claims 13 to 23, characterized in that it furthermore comprises means (601) for formatting said recovered information before supplying it to said at least one application (322)
30 sending said request.

25. Receiver/decoder device in an interactive digital television system (106), characterized in that it comprises means suited to implementation of the information recovery method according to any one of
35 Claims 1 to 12.

26. Receiver/decoder device in an interactive digital television system, characterized in that it comprises an information recovery device (103b) according to any one of Claims 13 to 24.

5 27. Terminal device in an interactive digital television system, characterized in that it comprises a receiver/decoder device (102) according to Claim 25 or 26.

10 28. Interactive digital television system, characterized in that it comprises at least one receiver/decoder device (102) according to Claim 25 or 26.

29. Interactive digital television system, characterized in that it comprises at least one terminal device (111) according to Claim 27.

AMENDED CLAIMS

[received by the International Bureau on 25 May 2005 (25.05.2005);
original claims 1-29 amended (5 pages)]

1. Method of recovering information in an interactive digital television system (106), in which information from a transmission centre (101) is transported in a data stream (10) to at least one terminal device (111) in which one or more applications (322) are running, the method comprising:
 - a step of loading and storing the information in a memory (103) provided in the terminal device (111),
 - 10 a step of receiving (E40) from the at least one application (322) a request to recover the information; and
 - a step of recovering (E44) of the information from an information carrier (10, 103) containing the information and provision of the duly recovered information to the at least one application (322) sending
15 the request

characterized in that it further comprises the step carried out in the terminal device (111) of searching (E41) for the information, according to at least one predefined selection criterion, in at least one of the information carriers formed by the data stream (10), and the memory (103).

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 2. The method as claimed in claim 1, characterized in that the search step b) comprises the following sub-step:
 - searching (Type 1) for the information in the memory (103).

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 3. The method as claimed in claim 1, characterized in that the search step b) comprises the following sub-step:
 - searching (Type 2) for the information in the data stream (10).

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 4. The method as claimed in claim 1, characterized in that the search step b) comprises the following sub-step:
 - searching (Type 4) for the information in the memory (103) after an unsuccessful search in the data stream (10).

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 5. The method as claimed in claim 1, characterized in that the search step b) comprises the following sub-step:

searching (Type 3) for the information in the data stream (10) after an unsuccessful search in the memory (103).

6. The method as claimed in any one of claims 1 to 5,
5 characterized in that the information is encapsulated in at least one MPEG table identified by a respective table identifier (TID).

7. The method as claimed in claim 6, characterized in that
the search step comprises the sub-step (E502, E505, E508, E512) of
10 searching for the MPEG table from its respective table identifier (TID)
whereas the recovery step comprises the sub-step (E507, E510, E514) of
recovering the information from the duly identified MPEG table.

8. The method as claimed in any one of claims 1 to 7,
15 characterized in that it furthermore comprises the step of defining at least
one the selection criterion by the application (322).

9. The method as claimed in any one of claims 1 to 8,
characterized in that it furthermore comprises the step of defining at least
20 one the selection criterion by an intermediate software layer (300b, 600)
and/or a hardware layer (300c, 600) of the terminal device (111).

10. The method as claimed in any one of claims 1 to 9,
characterized in that it furthermore comprises the step of defining at least
25 one the selection criterion by the interactive digital television system (106).

11. The method as claimed in claim 6, characterized in that it
furthermore comprises the step of storing the information and/or MPEG
tables in the memory (103) according to a structural organization similar to
30 that of the information and/or MPEG tables in the data stream (10).

12. The method as claimed in any one of claims 1 to 11,
characterized in that it furthermore comprises the step of formatting (EA4,
EB4) the recovered information before supplying the latter to the at least
35 one application (322) sending the request.

13. Information recovery device in an interactive digital television system (106) in which information originating from a transmission centre (101) is transported in a data stream (10) to at least one terminal device (111) in which one or more applications (322) are running, the terminal device (111) being equipped with:

5 an information memory (103),
 means (103a) for loading the information into the information memory (103),
 means (211, 322b, 316, 320, 318) for receiving a request
10 sent by at least one the application (322) to recover the information;
 means (211, 322b, 316, 320, 318) for recovering the information from an information carrier (10, 103) containing the information and supplying the duly recovered information to the at least one application (322) sending the request;

15 characterized in that it further comprises:
 means (211, 322b, 316, 320, 318) for searching, according to at least one predefined selection criterion, for the information in at least one of the information carriers formed by the data stream (10) and the information memory (103).

20 14. The device as claimed in claim 13, characterized in that the search means comprise first additional means for searching for the information in the memory (103).

25 15. The device as claimed in claim 13, characterized in that the search means comprise second additional means for searching for the information in the data stream (10).

30 16. The device as claimed in claim 13, characterized in that the search means comprise third additional means for searching for the information in the memory (103) after an unsuccessful search in the data stream (10).

35 17. The device as claimed in claim 13, characterized in that the search means comprise fourth additional means for searching for the information in the data stream (10) after an unsuccessful search in the memory (103).

18. The device as claimed in any one of claims 13 to 17, characterized in that the information is encapsulated in at least one MPEG table identified by a respective table identifier (TID).

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19. The device as claimed in claim 18, characterized in that the search means comprise fifth additional means for searching for the MPEG table from its respective table identifier (TID) whereas the recovery means comprise additional means for recovering the information from the duly identified MPEG table.

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20. The device as claimed in any one of claims 13 to 19, characterized in that it furthermore comprises first means for defining at least one the selection criterion by the application (322).

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21. The device as claimed in any one of claims 13 to 20, characterized in that it furthermore comprises second means for defining at least one the selection criterion by an intermediate software layer (300b, 600) and/or a hardware layer (300c, 600) of the terminal device (111).

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22. The device as claimed in any one of claims 13 to 21, characterized in that it furthermore comprises third means for defining at least one the selection criterion by the interactive digital television system (106).

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23. The device as claimed in any one of claims 13 to 22 and claim 18, characterized in that the memory (103) comprises additional means for storing the information and/or MPEG tables according to a structural organization similar to that of the information and/or MPEG tables in the data stream (10).

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24. The device as claimed in any one of claims 13 to 23, characterized in that it furthermore comprises means (601) for formatting the recovered information before supplying it to the at least one application (322) sending the request.

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25. Receiver/decoder device in an interactive digital television system (106), characterized in that it comprises means suited to implementation of the information recovery method according to any one of claims 1 to 12.

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26. Receiver/decoder device in an interactive digital television system, characterized in that it comprises an information recovery device (103b) according to any one of claims 13 to 24.

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27. Terminal device in an interactive digital television system, characterized in that it comprises a receiver/decoder device (102) according to claim 25 or 26.

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28. Interactive digital television system, characterized in that it comprises at least one receiver/decoder device (102) according to claim 25 or 26.

29. Interactive digital television system, characterized in that it comprises at least one terminal device (111) according to claim 27.

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